Acta Oncologica, 2014; 53: 161–163

informa
healthcare

EDITORIAL

Implications of patients' socioeconomic status – what oncologists should be aware of

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In this issue of Acta Oncologica, we can read the results of a Dutch study which focuses on patient adherence with regards to oral cancer treatments [1]. This has become a most important part of oncology, as treatments are no longer routinely administered intravenously (and thus supervised by hospital staff) but in many cases left to the patient to manage at home. How confident can we be that what the doctor prescribes is what the patient really takes? At some stage most colleagues have worried about patient compliance and understanding – and in this setting over-adherence or a misunderstood dosage can lead to terrible consequences, or even death.

The study by Timmers et al. addresses patient adherence not only to oral chemotherapy but also to tyrosine kinases, lenalidomide and thalidomide. Not surprisingly, the authors find that some patients take too little whilst others take too much of these highly potent drugs. Patients on a cyclic dose schedule, those with higher education and those who did not live alone had the highest chances of optimal adherence to the dose schedule.

The relationship between cancer and socioeconomic status (SES) has been studied extensively, and there is agreement that social factors influence cancer survival. Studying SES is complex and one has to consider factors such as patient's income, mean income in area of habitation, race, ethnicity, educational level, smoking and alcohol habits as well as distance to hospital or other care facility. In the Scandinavian countries educational level has been utilized as a useful marker when studying SES as income gaps are not as wide as in, for instance, North America. Here and elsewhere studies have shown that patients of higher education have a better overall and cancer-specific survival than less educated patients, with survival differences sometimes being larger than what can be obtained through modern adjuvant treatment [2].

Why is this so? A popular explanation (albeit one hard to verify) has been that in groups of lower SES co-morbidity is more prevalent. Co-morbidity is challenging to measure objectively and is seldom reported in cancer registers, although one Dutch study has shown that in a large material, co-morbidity was approximately 50% more frequent in low SES than in high SES-groups [3]. It is reasonable to believe that the presence of other diseases will directly or indirectly influence cancer survival, either through the patient's ability to undergo treatment or through treatment complications due to other illness.

The uncomfortable part of SES versus cancer survival is whether patients' SES can actually influence *treatment* (and thus, survival). Few oncologists and surgeons admit to altering treatment due to their patients' social status, and yet a number of studies now clearly show that all parts of cancer treatment (surgical approach, radiotherapy, adjuvant and palliative chemotherapy) can be influenced by the patient's SES [2,4,5]. This seems to be independent of the type of healthcare system available, i.e. these treatment gradients have been observed even in public-funded systems which serve all inhabitants at nominal fees [6].

That higher education should influence survival has fuelled much discussion and some have argued that higher education is only a "marker" of high SES. However, having higher education leads to high health literacy, meaning good ability to navigate the healthcare system, understand doctor's instructions and probably also to comprehend the importance of treatment adherence [7,8]. Studies have also shown

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(Received 7 November 2013; accepted 8 November 2013)

ISSN 0284-186X print/ISSN 1651-226X online
DOI: 10.3109/0284186X.2013.865079

that patients with higher education have longer consultations with their doctor than patients of lower education [9,10]. Even if this should probably be the other way around, the phenomenon is supported by oncologists who describe their highly educated patients as well-read, demanding, and with more questions than their less educated counterparts [11].

Living alone is not beneficial when it comes to survival [12–14]. Studies have shown that patients who do not live with someone (partner, child or other family member) have shorter survival than others [15,16]. Some have argued that this is due to strong individuals being "selected" into partnership whilst others have hypothesized that family support during cancer therapy help patients withstand adverse treatment effects [17–20]. In studies done on adherence to therapy (in cancer and other areas of medicine) a number of groups have shown that it is beneficial to have the support of a spouse or other family member [21–24]. In a small interview study in Sweden, oncologists said they take patients' family situation into consideration when prescribing treatment, some saying that they actively refrain from combination chemotherapy (fearing toxicity) and oral chemotherapy (fearing a lack of compliance) [11]. The present study by the Dutch group [1] adds support to this belief – that patients who lack social support are less compliant when it comes to handling outpatient cancer treatment.

In most papers published on the relationship between patients' SES and cancer, the conclusions are similar – underserved groups must be given more support to compensate for their disadvantage. If patients with lower education and poor social network are less adherent to oral cancer treatments, this may in part explain why their survival is inferior. These patients need longer consultations instead of shorter, more healthcare resources instead of less. If our ambition is to improve survival, we must remember that it can only be done by improving results for all SES-groups. No matter how efficient new treatments may be, they are of no use if the patient does not take them as prescribed. The Dutch study adds valuable information for medical professionals whose aim is to supply tailored care for *all* patients in order to improve cancer survival.

Declaration of interest: The author report no conflicts of interest. The author alone is responsible for the content and writing of the paper.

References

[1] Timmers L, Boons CCLM, Kropff F, van de Ven PM, Swart EL, Smit EF, et al. Adherence and patients' experiences with the use of oral anticancer agents. Acta Oncol 2014;53: 259–267.

[2] Cavalli-Bjorkman N, Lambe M, Eaker S, Sandin F, Glimelius B. Differences according to educational level in the management and survival of colorectal cancer in Sweden. Eur J Cancer 2011;47:1398–406.

[3] Louwman WJ, Aarts MJ, Houterman S, van Lenthe FJ, Coebergh JW, Janssen-Heijnen ML. A 50% higher prevalence of life-shortening chronic conditions among cancer patients with low socioeconomic status. Br J Cancer 2010;103:1742–8.

[4] Osborne C, Ostir GV, Du X, Peek MK, Goodwin JS. The influence of marital status on the stage at diagnosis, treatment, and survival of older women with breast cancer. Breast Cancer Res Treat 2005;93:41–7.

[5] Chang SM, Barker FG, 2nd. Marital status, treatment, and survival in patients with glioblastoma multiforme: A population based study. Cancer 2005;104:1975–84.

[6] Cavalli-Bjorkman N, Qvortrup C, Sebjornsen S, Pfeiffer P, Wentzel-Larsen T, Glimelius B, et al. Lower treatment intensity and poorer survival in metastatic colorectal cancer patients who live alone. Br J Cancer 2012;107:189–94.

[7] Mastroianni CM, Viscomi C, Ceniti S, De Simone R, Filice A, Gadaleta Caldarola G, et al. Preferences of patients with advanced colorectal cancer for treatment with oral or intravenous chemotherapy. Patient 2008;1:181–7.

[8] Pini TM, Hawley ST, Li Y, Katz SJ, Griggs JJ. The influence of non-clinical patient factors on medical oncologists' decisions to recommend breast cancer adjuvant chemotherapy. Breast Cancer Res Treat 2012;134:867–74.

[9] Siminoff LA, Graham GC, Gordon NH. Cancer communication patterns and the influence of patient characteristics: Disparities in information-giving and affective behaviors. Patient Educ Couns 2006;62:355–60.

[10] Shin DW, Park JH, Shim EJ, Hahm MI, Park EC. Predictors and outcomes of feeling of insufficient consultation time in cancer care in Korea: Results of a nationwide multicenter survey. Support Care Cancer 2012;20:1965–73.

[11] Cavalli-Bjorkman N, Glimelius B, Strang P. Equal cancer treatment regardless of education level and family support? A qualitative study of oncologists' decision-making. Br Med J Open 2012;2.

[12] Kravdal O. The impact of marital status on cancer survival. Soc Sci Med 2001;52:357–68.

[13] Du KL, Bae K, Movsas B, Yan Y, Bryan C, Bruner DW. Impact of marital status and race on outcomes of patients enrolled in Radiation Therapy Oncology Group prostate cancer trials. Support Care Cancer 2012;20:1317–25.

[14] Patel MK, Patel DA, Lu M, Elshaikh MA, Munkarah A, Movsas B. Impact of marital status on survival among women with invasive cervical cancer: Analysis of population-based surveillance, epidemiology, and end results data. J Low Genit Tract Dis 2010;14:329–38.

[15] Kravdal O. The poorer cancer survival among the unmarried in Norway: Is much explained by comorbidities? Soc Sci Med 2013;81:42–52.

[16] Wang L, Wilson SE, Stewart DB, Hollenbeak CS. Marital status and colon cancer outcomes in US Surveillance, Epidemiology and End Results registries: Does marriage affect cancer survival by gender and stage? Cancer Epidemiol 2011;35:417–22.

[17] Lin JH, Zhang SM, Manson JE. Predicting adherence to tamoxifen for breast cancer adjuvant therapy and prevention. Cancer Prev Res (Phila) 2011;4:1360–5.

[18] Datta GD, Neville BA, Kawachi I, Datta NS, Earle CC. Marital status and survival following bladder cancer. J Epidemiol Community Health 2009;63:807–13.

[19] Goodwin JS, Hunt WC, Key CR, Samet JM. The effect of marital status on stage, treatment, and survival of cancer patients. JAMA 1987;258:3125–30.

[20] Dieperink KB, Hansen S, Wagner L, Johansen C, Andersen KK, Hansen O. Living alone, obesity and smoking: Important factors for quality of life after radiotherapy and androgen deprivation therapy for prostate cancer. Acta Oncol 2012;51:722–9.

[21] Wu JR, Lennie TA, Chung ML, Frazier SK, Dekker RL, Biddle MJ, et al. Medication adherence mediates the relationship between marital status and cardiac event-free survival in patients with heart failure. Heart Lung 2012; 41:107–14.

[22] Gagnadoux F, Le Vaillant M, Goupil F, Pigeanne T, Chollet S, Masson P, et al. Influence of marital status and employment status on long-term adherence with continuous positive airway pressure in sleep apnea patients. PloS One 2011;6:e22503.

[23] de Almeida MH, Pagnano KB, Vigorito AC, Lorand-Metze I, de Souza CA. Adherence to tyrosine kinase inhibitor therapy for chronic myeloid leukemia: A Brazilian single-center cohort. Acta Haematol 2013;130:16–22.

[24] Bhatia S, Landier W, Shangguan M, Hageman L, Schaible AN, Carter AR, et al. Nonadherence to oral mercaptopurine and risk of relapse in Hispanic and non-Hispanic white children with acute lymphoblastic leukemia: A report from the children's oncology group. J Clin Oncol 2012;30:2094–101.